

STATUS OF THE CLAIMS SECTION:

Claim 1 (previously presented): A method of judging communication stability of a network system including a master unit forming a programmable controller and a slave connected to a network, said method comprising the steps of:

transmitting from said master unit to said slave a distorted test pattern formed by changing width of each pulse of a standard test pattern to a specified distortion level;

returning a response from said slave to said master unit if said slave receives said distorted test pattern normally; and

judging that said network system has communication stability corresponding to said specified distortion level if said master unit receives said response normally.

Claim 2 (previously presented): The method of claim 1 wherein a plurality of distorted test patterns are sequentially transmitted from said master to said slave, each of said distorted test patterns being formed by changing width of each pulse of said standard test pattern to a different one of a plurality of specified distortion levels, said method further comprising the steps of:

determining a boundary, beyond which communication from said master unit to said slave becomes impossible, based on whether or not there is a response from said slave to the distorted test pattern distorted to each of said specified distortion levels; and

determining said communication stability based on said boundary.

Claim 3 (previously presented): The method of claim 1 wherein said slave returns said response by changing width of each pulse of said response according to said specified distortion level of the distorted test pattern received from said master unit.

Claim 4 (previously presented): The method of claim 2 wherein said slave returns said response by changing width of each pulse of said response according to the one different specified distortion level.

Claim 5 (previously presented): The method of claim 1 wherein said network system further includes a repeater connected between said master unit and said slave, said

repeater being adapted to carry out waveform shaping on said distorted test pattern to form a corrected signal and to output said corrected signal after changing width of each pulse of said corrected signal according to said specified distortion level.

Claim 6 (previously presented): The method of claim 2 wherein said network system further includes a repeater connected between said master unit and said slave, said repeater being adapted to carry out waveform shaping on said distorted test pattern to output a corrected signal and to output said corrected signal after changing width of each pulse of said corrected signal according to the one different specified distortion level.

Claim 7 (previously presented): The method of claim 3 wherein said network system further includes a repeater connected between said master unit and said slave, said repeater being adapted to carry out waveform shaping on said distorted test pattern to output a corrected signal and to output said corrected signal after changing width of each pulse of said corrected signal according to said specified distortion level.

Claim 8 (previously presented): The method of claim 4 wherein said network system further includes a repeater connected between said master unit and said slave, said repeater being adapted to carry out waveform shaping on said distorted test pattern to output a corrected signal and to output said corrected signal after changing width of each pulse of said corrected signal according to the one different specified distortion level.

Claims 9-19 (canceled).

Claim 20 (previously presented): A network system comprising a master unit forming a programmable controller and a slave, said master unit and said slave being connected to a network,

wherein said master unit includes:

transmitting means for transmitting a distorted test pattern, said distorted test pattern being formed by changing width of each pulse of a standard test pattern to a specified distortion level; and

judging means for judging that said network has communication stability

corresponding to said specified distortion level if said master unit receives a response normally from said slave, said slave being adapted to return said response when said distorted test pattern is received normally.

Claim 21 (previously presented): The network system of claim 20 further comprising a repeater between said master unit and a slave, said repeater comprising:
waveform shaping means for carrying out waveform shaping on a distorted test pattern changed to a specified distortion level and sent from said master unit; and
outputting means for changing width of each pulse of the waveform-shaped test pattern according to said specified distortion level and outputting the distorted waveform-shaped test pattern.